

REMARKS

By Office Action mailed September 16, 2004, pending claims 18-26 stand rejected, reconsideration of which is respectfully requested in view of the following remarks. Claims 18-26 are now pending.

Rejections Under 35 U.S.C. §102(e)

Claims 18 and 21 stand rejected under 35 U.S.C. §102(e) as anticipated by Forster et al. (U.S. Patent No. 6,134,950). More specifically, the Examiner asserts that Forster discloses a method for determining the concentration of a laminar sample stream that comprises: providing a microfluidic channel; introducing a first fluid containing a diffusible constituent into a first inlet; introducing a second fluid into a second inlet; flowing the first and second fluids through the channel in parallel laminar flow so that the diffusible constituent diffuses between the first and second fluids to form a single combined fluid stream which has uniform composition across the width of the microfluidic channel; and varying the flow rate of the first and second fluids such that the ratio of the flow rates of the first and second fluids is not constant and the concentration of the diffusible constituent in the single combined fluid stream varies along the length of the microfluidic channel.

Applicants respectfully disagree with the Examiner's application of Forster and submit that Forster does not disclose every element of the pending claims. In particular, Forster does not disclose a method comprising (1) forming a single combined fluid stream which has a uniform composition across the width of the microfluidic channel; or (2) varying the flow rates of a first fluid, a second fluid or both the first and second fluids such that the ratio of the flow rates of the first and second fluids is not constant and the concentration of the diffusible constituent in the single combined fluid stream varies along the length of the microfluidic channel.

Forster is directed to a method for determining the concentration of analyte particles in a sample stream. As noted by the Examiner, such method comprises flowing a first fluid comprising a diffusible constituent (such as a sample stream comprising analyte particles) through a first inlet into a microfluidic channel and flowing a second fluid (such as an indicator

stream comprising an indicator substance) through a second inlet into the same microfluidic channel, thereby providing a diffusion interface between the first and second fluids. As noted by Forster, as the first and second fluids flow through the microfluidic channel, the diffusible constituent (*i.e.*, the analyte particles) will diffuse across the diffusion interface into the second fluid, thereby providing a detection area.

In the present Office Action, the Examiner points to column 9, lines 41-59, of Forster as disclosing the formation of a single combined fluid stream having a uniform composition across the width of the microfluidic channel. Although, as noted in the passage cited by the Examiner, Forster discloses that the diffusible constituent may eventually be uniformly distributed, Forster does not teach the formation of a *single combined fluid stream having a uniform composition across the width of the microfluidic channel*. To the contrary, the method of Forster relies upon the maintenance of parallel laminar flow between adjacent (and separate) fluid streams to facilitate the formation of a diffusion interface between the first and second fluid streams, thereby providing a detection area, and, in this way, teaches against the formation of a single combined fluid stream. Accordingly, Applicants submit that Forster does not disclose this element of pending claim 18.

With respect to the second aspect of claim 18 noted above, the Examiner points to column 11, lines 14-25, and column 10, lines 58-64, of Forster as disclosing that the flow rates of the first and second fluid streams may be varied such that the ratio of the flow rates is not constant. Applicants respectfully disagree with the Examiner's reading of Forster. Although Forster discloses that the first and second fluid streams may be flowing at different rates, Forster does not teach that such flow rates may be *varied* (*i.e.*, not be constant). To the contrary, the mathematical models set forth in Forster for determining analyte concentration rely upon the maintenance of a known ratio between the flow rates. Accordingly, Applicants submit that Forster does not anticipate this element of pending claim 18.

In view of the foregoing, Applicants submit that Forster does not disclose every element of pending independent claim 18. Furthermore, Applicants submit that there is no teaching or suggestion in Forster to modify the method disclosed therein to achieve the claimed method of the present invention. As for dependent claim 21, since this claim is dependent from,

and thus contain all the limitations of claim 18, it is patentable for the same reasons. Accordingly, Applicants request that this ground of rejection be withdrawn.

Rejection Under 35 U.S.C. §103(a)

Claims 19-20 and 22-26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Forster in view of Weigl et al. (U.S. Patent No. 6,171,865) for the reasons set forth on page 5 of the Office Action. As noted on page 3 of the Office Action, these rejections are based upon the Examiner's conclusion that Forster discloses the method of pending independent claim 18. However, as set forth above, Applicants disagree with the Examiner's application of Forster to claim 18. Accordingly, Applicants respectfully request that these rejections also be withdrawn.

Application No. 09/863,674

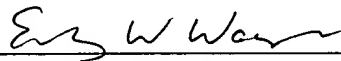
Reply to Office Action mailed September 16, 2004

In view of the above amendments and remarks, allowance of claims 18-26 is respectfully requested. A good faith effort has been made to place this application in condition for allowance. However, should any further issue require attention prior to allowance, the Examiner is requested to contact the undersigned at (206) 622-4900 to resolve the same. Furthermore, the Commissioner is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Respectfully submitted,

C. Frederick Battrell et al.

SEED Intellectual Property Law Group PLLC



Emily W. Wagner

Registration No. 50,922

EWV:cw

Enclosure:

Postcard

701 Fifth Avenue, Suite 6300  
Seattle, Washington 98104-7092  
Phone: (206) 622-4900  
Fax: (206) 682-6031

517424